NSN 6515-01-379-7852
CUTTER-VACUUM, ORTHOPEDIC CAST
115/230 VOLT 50/60 HZ

MAINTENANCE / OPERATOR'S MANUAL

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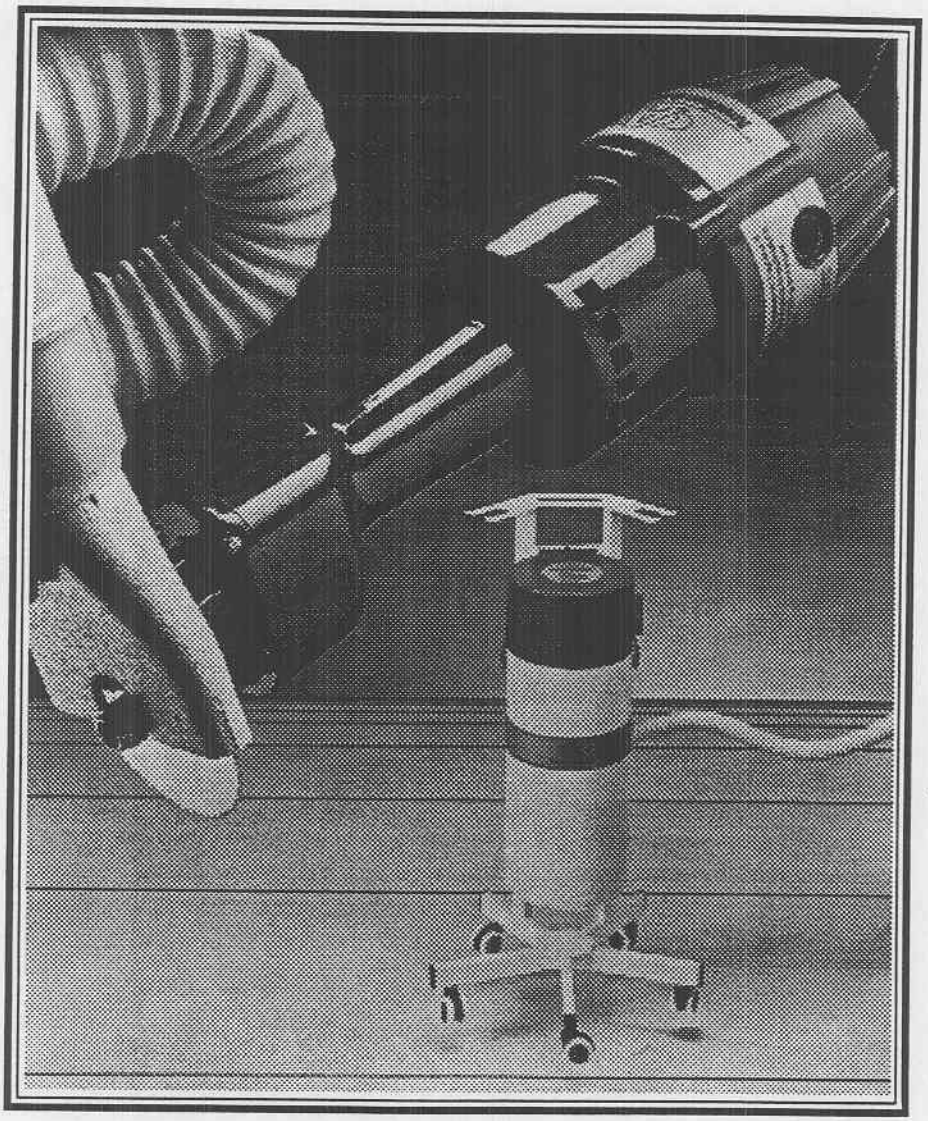

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DESCRIPTION OF EQUIPMENT

The American Orthopaedic Cast Cutter and Cast Dust Vacuum is a specialized tool designed for the removal and collection of dust from padded orthodedic casts. This system is not for consumer use and should only be used by qualified personnel experienced in cast removal.

This orthopedic cast cutter consists of an electric motor within a metal and fiberglass housing, an on-off line switch, and a line cord. The motor uses a cam-link mechanism to impart oscillating motion to an attached circular saw blade.

The vacuum is mounted on a mobile caster stand equipped with an integrated handle and can easily be emptied. The vacuum is powered by an electric motor and can be activated from the cast cutter or by a manual on-off switch. The vacuum is connected to a cast cutter by a flexible vacuum hose and dust collector/shield assembly.

All components are fabricated from materials fully capable of performing their intended function.

SUPPLIED EQUIPMENT

1 each	cutter, orthopaedic cast 115v AC
1 each	blade, 2", plaster
1 each	blade, 2.5", plaster
1 each	galvanized metal wrench
1 each	vacuum, cast dust 115v AC with 10' hose
1 each	mobile stand for vacuum
1 each	dust collection/shield assembly
1 each	transformer, step down
1 each	cord, modular with Schuko type plug
2 each	Maintenance Manual/Commercial Operating Instructions

EQUIPMENT SPECIFICATIONS

Weight:
Cast Cutter- 4.5 lbs with one blade
Vacuum- 37 lbs with mobile stand
Transformer- 20 lbs

Voltage:
Cast Cutter/Vacuum 115v AC 50/60 Hz
Step-down Transformer-input 220/240v AC 50/60 Hz
output 110/120v AC 50/60 Hz

Cords:
Cast Cutter/Vacuum- 9' cord with molded-on strain relief and hospital grade plug
Transformer- modular AC cable 6' with Schuko type European standard and female NEMA 5-15R female type plug

Housing:
Cast Cutter: die cast aluminum body, reinforced fiberglass rear housing
Vacuum: drawn aluminum cannister

ELECTRICAL CERTIFICATIONS

Cast Cutter- Underwriters Laboratory and Canadian Standards
Vacuum- City of Los Angeles Standards

STORAGE

Store in a cool dry place.

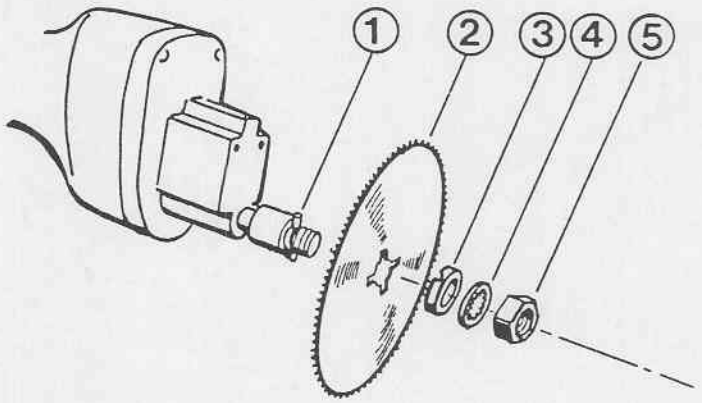
ASSEMBLY-START UP

(Fig. 1)

Blade Installation 2 or 4-Way Cast Saw Blades

1. Remove blade nut (5), lockwasher (4) and blade spacer (3) from the drivehead (1).
2. Install the blade (2) on the drivehead so that two of the notches on the blade fit over the projecting drive pin .
3. Follow with the blade spacer (3)on the drivehead so the recessed side fits over the projecting drive pin.
4. Place the lockwasher (4) next to the blade spacer (3).
5. Replace the blade nut (5) and tighten firmly with the wrench provided.

Instructions for Installing 2 or 4 Way Cast Saw Blades on: Model No. G95-202



INITIAL VACUUM ASSEMBLY

Screw casters into treaded holes in stand base. Hang vacuum canister in V bracket on stand. Route the vacuum hose through the stand and attach the large end of the hose to the 90° inlet until locked in place.

Attach the vacuum nozzle bracket and nozzle to the cast cutter as shown in the vacuum nozzle assembly instruction.

After attaching the nozzle and bracket to the cast cutter, connect the small end of the vacuum hose to the round open end of the nozzle. Attach the cast cutter power cord to the hose using the straps provided. Route the power cord under and behind the vacuum canister and connect it to the appropriately marked receptacle on the bottom of the control box which is located behind the motor housing.

Place the switch on the control box to the "OFF" position. For use with 115 volt power source, connect the control box power cord to an appropriate 115VAC, 60 Hz wall outlet . The system is ready for use. For use with 230 volt power source, see section below.

NOTE: The system contains two filters which are located inside the vacuum canister. They are accessible by opening the two latches on either side of the canister and removing the motor housing.

The primary filter is an "open cell" foam disc that is held in place by friction against the inside of the canister housing. A foam retaining ring is located inside the canister for proper positioning of the filter. The proper position is indicated inside the canister at the top of the canister inlet. Rough handling in shipping may have dislodged this filter from its proper location and it may have to be repositioned prior to use.

TRANSFORMER- FOR USE WITH 220-240 VOLT POWER SOURCES

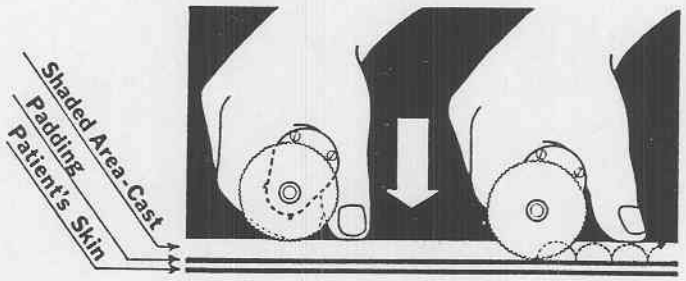
Attach the modular powercord supplied with the transformer by connecting the female three prong plug to the three prong male receptacle located on the top of the transformer. The other end of the power cord (two pronged-EUROPLUG) should be connected to 220-240 volt power source. Alternate modular power cords can be obtained with male plugs configured for use with other 220-240 volt receptacles. The 115 volt vacuum/ cast cutter can then be used by connecting the power cord from vacuum stand to the 115v outlet located on the top of the transformer.

WALL MOUNTING VACUUM ASSEMBLY

Follow instructions sheet and mounting diagram provided with wall cradle bracket. Requires position near appropriate electrical receptacle

OPERATION

CAST CUTTER



(Fig. 2)

The cast is removed utilizing a series of up and down motions combined with linear movement. Hold the unit with one hand as illustrated, move the switch to the "ON" position and, using the thumb as a gauge, depress blade into the cast.

The blade should be inserted at a slight angle into the cast until the cutting pressure lessens, indicating that the blade is through the cast and is touching the padding. The blade should then be lifted leaving the tip in the cutting groove and advance along the cutting line for about one-half inch and repeat as above. DO NOT exert excessive working pressure. DO NOT use on non-padded casts. DO NOT attempt to cut skin-tight casts.

VACUUM OPERATION

With the switch on the control box placed in the "cast cutter/vacuum operation" position, the vacuum will be activated when the cast cutter is turned on.

If it is desired to use the vacuum for general cleaning purposes, the hose is easily detached from the cast cutter and the vacuum activated by placing the switch in the "ON vacuum only" position.

WARNINGS

The blade oscillates rapidly and becomes very warm if pushed through the cast using constant pressure. Read instructions completely, to assure proper operation.

Dull or damaged blades should never be used.

While in use, keep hands away from the oscillating blade.

Do not operate the vacuum without both filters in position as this may result in damage to the motor.

The following items should be considered when operating the Cast Cutter/ Vacuum:

A) The power supply cord should be kept away from the cutting area at all times.
B) When disconnecting the Cast Cutter/ Vacuum from an outlet, pull on the plug. Never disconnect by pulling on the cord.
C) Do not operate in areas where flammable or explosive vapors may be present.
D) Do not autoclave or immerse in any liquid.
E) Electrical repairs must only be made by a qualified technician.
F) Do not use if vacuum control box appears damaged
G) Plug power cords into relay box per label instructions only

Ear protection should be considered when cutting materials that create excessive noise.

MAINTENANCE INSTRUCTIONS
VACUUM CLEANING AND MAINTENANCE

This vacuum system has been designed specifically for the efficient removal and collection of cast dust. Proper care of the reusable filters will assure their maximum efficiency and life.

This collection unit should be emptied and the filters shaken clean after approximately 100 uses. This is accomplished in the following manner:

1. Separate the canister from the motor housing.
2. Remove the paper filter element from the motor housing and shake it clean. This is a reusable filter element and should not be washed or dipped in water. If element is torn or damaged, replace it with a new one.
3. Remove the open cell foam filter element from inside the top of the canister. It may be washed in warm water. Excess water may be shaken from filter, but allow it to dry thoroughly prior to re-use.
4. Empty canister.
5. Reassemble in reverse order.

DO NOT operate the unit without both filters in position as this may result in damage to the motor.

The American Orthopaedic Cast Dust Vacuum is a specialized tool designed for rugged use. Other than filters, there are no user-serviceable parts inside. If the unit should become inoperable or is damaged, return it with a description of the problem to your distributor or to the factory address for appropriate service.

CAST CUTTER MAINTENANCE INSTRUCTIONS

This cutter is permanently lubricated- No bearing maintenance is required as the bearings are lubricated for life. The unplugged unit may be cleaned with a soft damp cloth.
Appropriate selection, use and maintenance of a sharp blade is necessary for safe, efficient cast removal. Additional friction caused by a dull blade will create excesive blade heat.
The American Orthopaedic Cast Cutter is a specialized tool designed for rugged use. There are no user-serviceable parts inside. If the unit should become inoperable or is damaged, return it with a description of the problem to your distributor or to the factory address for appropriate service.

MAINTENANCE SCHEDULE- CAST CUTTER

1. Daily and at each operating cycle:
    a. disconnect electrical plugs and check for security and cleanliness of connections. (i.e. no signs of burning on plug contacts)
    b. inspect electrical leads for cuts and abrasions. Any cuts necessitate change of lead.
    c. check blade for tightness.
    d. check tool for visual defects and cleanliness
2. Three month or 200 hours running- As daily plus:
    e. Blow cast dust from commutator housing while tool is running

Note: The following servicing to be carried out by qualified personnel.

    f. Open cam housing and clean out old grease.
    g. Lubricate the cam mechanism with nye syn oil
    h. Brush carbon dust from brushes
3. Six Monthly or 400 hours running- As three monthly servicing plus:
    i. Dismantle completely and clean
    j. Replace brushes
    k. Replace all worn componets: cams, bearings, etc
    l. Test electrical insulation in accordance with regulations

MAINTENANCE SCHEDULE- VACUUM

1. Shake filters clean after every 100 uses
2. Replace foam filter after every 300 uses
3. Replace paper filter if hole develops in filter
4. Check power cord for cracks or tears
5. Check electrical insulation

TROUBLE SHOOTING-CAST CUTTER

Problem	Likely Source
Blade stalls during cutting	Check Blade installation. Refer to Instructions for proper assembly
Noisy	Check Blade installation.
Excessive heat in blade area	Check blade sharpness. Verify selection of appropiate blade.
Intermittent operation	Check power cord for cracks, cuts. Return to factory for service.

Cutter Motor does not run	Are cutter and vacuum plugged into correct receptacles on vacuum relay box? Is Vacuum switch in Cast cutter/vacuum position? Plug cutter into other power source. If cutter runs check vacuum box resistor or relay. If saw doesn't run return to factory.
Vacuum Motor does not run	Check connection to power source. Return to factory.

PARTS

CONSUMABLE ITEMS

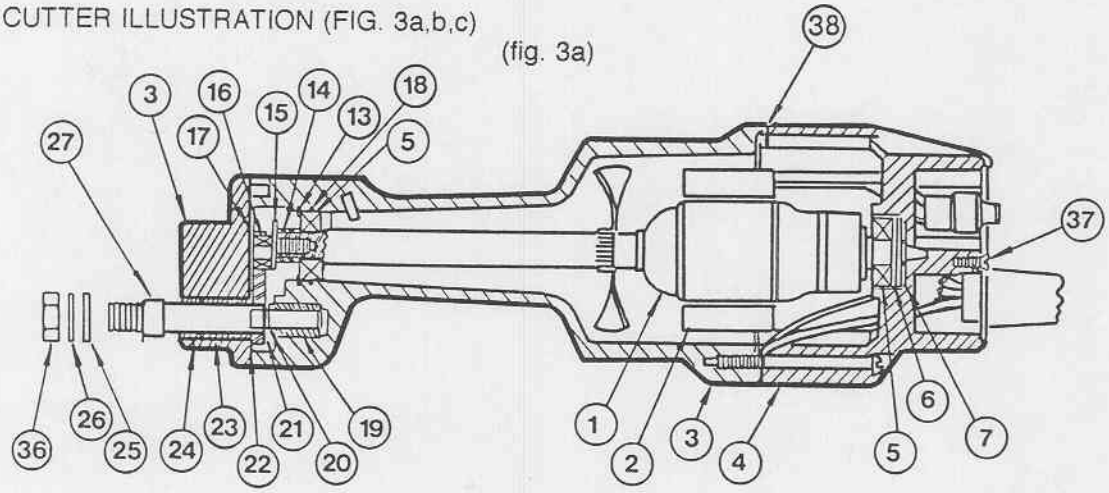
6515-00-323-4515	Blade,2" diameter
6515-00-323-4520	Blade,2.5" diameter
4183-162	Filter, paper for vacuum
4183-163	Filter, foam for vacuum

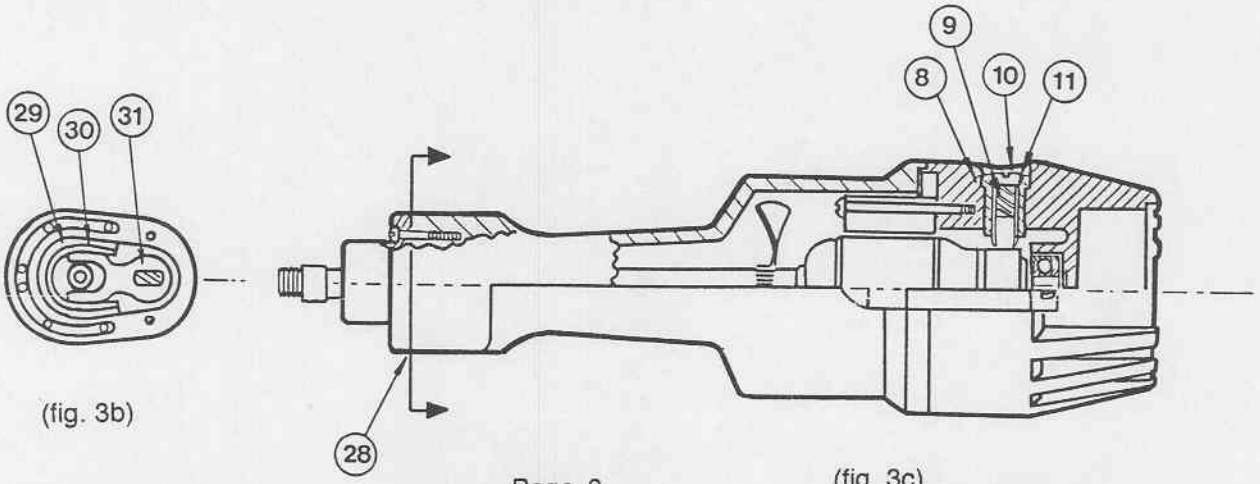
ACCESSORIES

4183-123	Adapter, other brands cast cutter to American Orthopaedic vacuum
4183-124	Adapter, American Orthopaedic cutter to other brands vacuuum
4183-283	Dust Collector/Shield, straight design

CAST CUTTER ILLUSTRATION (FIG. 3a,b,c)

(fig. 3a)





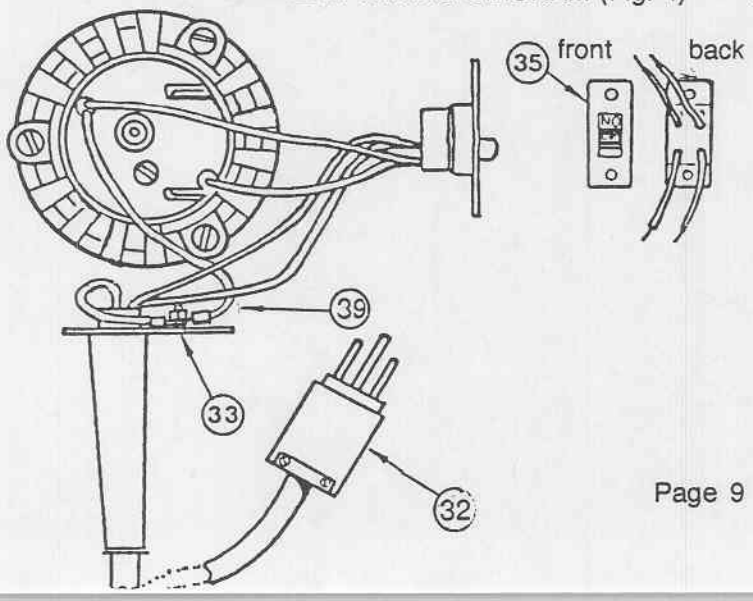
(fig. 3b)

(fig. 3c)

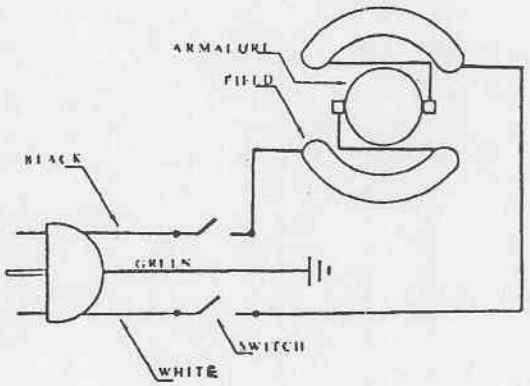
CAST CUTTER PARTS LIST

Key	Part #	Description	Qty	Fig	page	
1	AO 184	115v Armature		1	3a	8
2	AO 185	115v Field		1	3a	8
3	200069	Housing/Cover Assembly		1	3a	8
4	200073	Rear Housing		1	3a	8
5	AO 144	Bearing, Front, Rear		2	3a	8
6	AO 162	Rear Bearing Spring		1	3a	8
7	AO 145	Rear Bearing Washer		1	3a	8
8	AO 188	Brush Holder		2	3c	8
9	AO 163	Brush, Spring		2	3c	8
10	AO 164	Brush Cap		2	3c	8
11	AO 189	Brush Cap, Retainer		2	3c	8
13	AO 203	Retaining Ring		1	3a	8
14	AO 197	Spacer Bearing		1	3a	8
15	AO 160	Cam		1	3a	8
16	AO 198	Cam Bearing		1	3a	8
17	AO 199	Friction Plate		1	3a	8
18	335005	O-Ring		1	3a	8
19	AO 158	Drive Shaft Bushing		1	3a	8
20	AO 205	Drive Shaft Spring Washer		1	3a	8
21	AO 159	Retaining Ring (Drive Shaft)		1	3a	8
22	AO 204	Drive Shaft Spacer Washer		1	3a	8
23	AO 157	Front Housing Bushing		1	3a	8
24	AO 146	Oil Seal		1	3a	8
25	CG 321	Blade Spacer		1	3a	8
26	CA 269	Blade Lockwasher		1	3a	8
27	AO 126	Output Shaft		1	3a	8
28	AO 202	Gasket		1	3c	8
29	AO 200	Oil Felt		1	3b	8
30	AO 201	Felt Retaining Spring		1	3b	8
31	AO 125	Link		1	3b	8
32	AO 193	Power Cord		1	4	9
33	200238	Switch Plate		1	4	9
35	340036	Switch		1	4	9
36	CG 322	Blade Nut		1	3a	8
37	300009	Screw, 8-32 x .375		1	3a	8
38	200237	Grounding ring		1	3a	8
39	340075	Wire assembly		1	4	9

CAST CUTTER REAR WIRING DIAGRAM (Fig. 4)



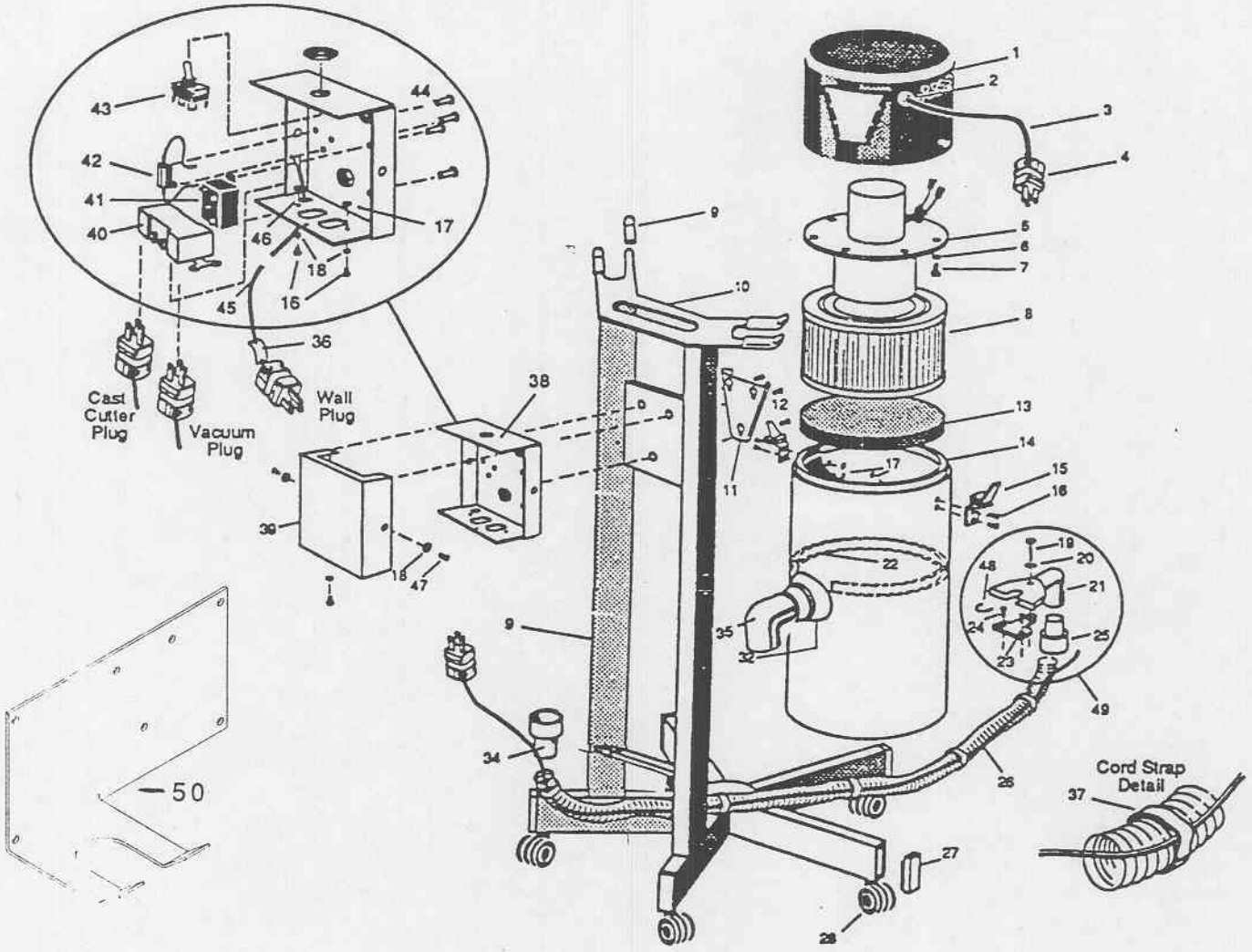
CAST CUTTER SCHEMATIC (Fig. 5)

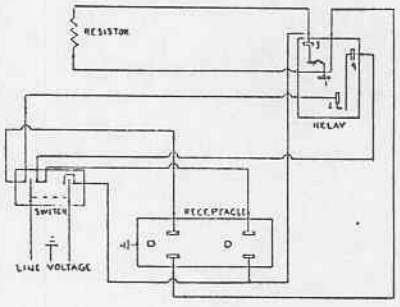


PARTS LIST: CAST DUST VACUUM 0295-252 (115 VAC, 60 Hz)

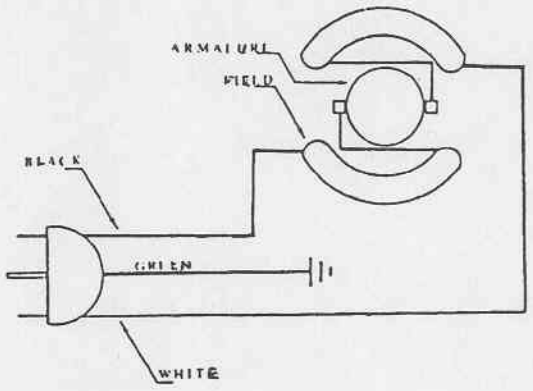
Key #	Part #	Description	Qty.	Fig	Page
1	AO 070	Motor Housing	1	6	11
2	AO 154	Strain Relief	1	6	11
3	340010	Power Cord	1	6	11
5	CY 4	Vacuum Motor (115 VAC)	1	6	11
7	VH 014	Screw, 8-15 x 1/2 self-tapping	6	6	11
8	4183-162	Paper Filter Element	1	6	11
10	AO111	Mobile Stand	1	6	11
11	VH 004	Vacuum Mounting Bracket	1	6	11
12	CA 455	Screw, 10-32 x 1/2 Rd. Hd.	3	6	11
13	4183-163	Open-cell Pre-filter	1	6	11
14	CY 360	Canister	1	6	11
15	CA 479	Canister Mounting Clasp	2	6	11
16	CA 264	Screw, 6-32 x 1/4 Truss Hd.	6	6	11
17	CA 454	Nut, 6-32 Keps Hex	6	6	11
18	CA 451	#6 Lock washer	6	6	11
19	AO 090	Knob, 10-32 x 1 1/8 Knurled	1	6	11
20	CA 199	#10 Lockwasher	1	6	11
21	AO 097	Vacuum Nozzle	1	6	11
22	CA 477	Open-cell Pre-filter Retainer	1	6	11
23	AO 096	Bracket, Vacuum Nozzle	1	6	11
24	CA 476	Screw, 6-32 x 1/2 Fl. Hd.	3	6	11
25	CM 866	Hose End, Female	1	6	11
26	RM 845	Vacuum Hose, 10'	1	6	11
27	AO 034	Tube Cap	5	6	11
28	AO 064	Caster	5	6	11
32	CM 867	Canister Inlet	1	6	11
34	CM 869	Hose End, Male	1	6	11
35	AO 035	90° Inlet	1	6	11
36	005071	Label, "Att Adequate Grounding"	1	6	11
37	200214	Strap	8	6	11
38	AO 113	Control Box Base	1	6	11
39	AO 112	Control Box Cover	1	6	11
40	AO 098	Duplex Receptacle, Hospital Grade	1	6	11
41	CY 3	Relay, Vacuum	1	6	11
42	340001	Resistor, 10 ohm, 20w (115 VAC)	1	6	11
43	340000	Switch, DPDT Toggle	1	6	11
44	CA 342	Pop Rivet, 1/8 x 1/4 x 5/16	4	6	11
45	340021	Power Cord	1	6	11
46	CY 58	Strain Relief	1	6	11
47	CA 481	Screw, 6-32 x 1/4 Self-tapping	3	6	11
48	335014	Retaining Ring	1	6	11
49	4183-124	Dust Collector/Blade Shield Asbly	1	6	11
50	AO 165	Wall hanging Cradle	1	6	11

VACUUM EXPLODED VIEW (FIG. 6)





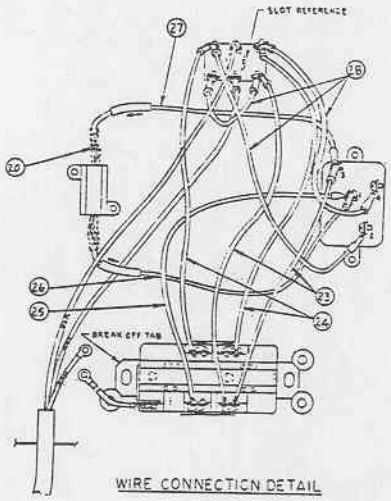
RELAY BOX SCHEMATIC (Fig.7)



VACUUM SCHEMATIC (FIG.8)

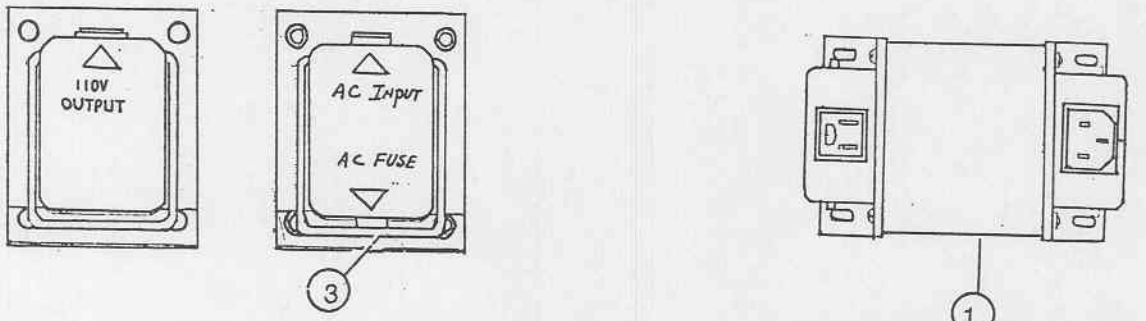
VACUUM RELAY BOX WIRING DIAGRAM (Fig. 9)

Key	Part #	Description
20	NI004	Solder wire
23	340012	Wire Assembly
24	340013	Wire Assembly
25	340014	Wire Assembly
26	340015	Wire Assembly
27	340016	Wire Assembly
28	340017	Wire Assembly



WIRE CONNECTION DETAIL

TRANSFORMER



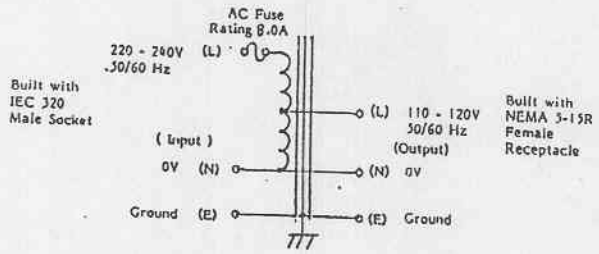
side views

output 115v input 230v
top view

TRANSFORMER ILLUSTRATION (FIG. 10)

TRANSFORMER PARTS FOR ST-1500GDS

Key	Part #	Description	Qty
1	St-1500	Transformer	1
2	HO5VVV-F	Power cord	1
3	8mA	Fuse	1



TRANSFORMER SCHEMATIC (FIG 11)

WARRANTY SERVICE PROCEDURES

Warranty service may be obtained by returning the inoperative product to any authorized American Orthopaedic products distributor or directly to M-PACT®, 1310 Kistler Drive, Eudora, Kansas 66025. You may call M-PACT® at 913-542-2920 for information regarding the location of the authorized American Orthopaedic distributor nearest you.

If the product must be shipped to an American Orthopaedic distributor or to M-PACT® to obtain warranty repairs, you will be responsible for the shipping charges incurred. M-PACT® Worldwide Management Corporation will pay the return shipping charges.

LIMITED WARRANTY

This product is warranted by M-PACT® Worldwide Management Corporation to be free from defects in material and workmanship for a period of ONE YEAR from the date of its purchase by the original user. This warranty is granted only to the original user and is subject to the provisions explained below.

WHAT IS NOT COVERED

- Parts such as filters or blades that require regular replacement.
- Damage or malfunction resulting from:

(1) Negligent use or misuse of the product,
(2) Use with improper voltage or current,
(3) Use contrary to the operating instructions and limitations stated herein,
(4) Improper maintenance,
(5) Improper assembly, or
(6) Alterations or modifications to the product which adversely affect the product's operation, performance or durability or that change the product's intended use.

DISCLAIMER OF IMPLIED WARRANTY

To the extent it is permissible by law, M-PACT® disclaims all implied warranties, including any warranty of MERCHANTABILITY and any warranty for FITNESS FOR A PARTICULAR PURPOSE. There are no warranties which extend beyond the limited express warranty described above. Should any warranty be implied by law in connection with the purchase of this product by the original user despite the foregoing disclaimer, including any warranty for FITNESS FOR A PARTICULAR PURPOSE, such warranty shall be limited to the one year limited express warranty period.

REMEDY

M-PACT® Worldwide Management Corporation will, at its option, repair or replace a defective product that is covered by this warranty pursuant to the terms for "Warranty Service Procedures" stated above. The remedy for breach of warranty is strictly and exclusively limited to repair or replacement of nonconforming products and M-PACT® does not authorize anyone, including but not limited to its distributors, to extend or offer any additional remedy. IN NO EVENT SHALL M-PACT® BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES. Some States do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

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